

*provided that*, the date and time of the failure to maintain proper operating parameters has been recorded in the station log.

(c) In any other situation in which it might reasonably be anticipated that the operating parameters might vary out of tolerance (such as planned array repairs or adjustment and proofing procedures), the licensee shall, *before such activity is undertaken*, obtain an STA in accordance with § 73.1635 in order to operate with parameters at variance and/or with reduced power as required to maintain all monitoring points within their specified limits.

[50 FR 30946, July 31, 1985, as amended at 60 FR 55480, Nov. 1, 1995]

**§ 73.68 Sampling systems for antenna monitors.**

(a) Each AM station permittee authorized to construct a new directional antenna system, must install the sampling system in accordance with the following specifications:

(1) Devices used to extract or sample the current and the transmission line connecting the sampling elements to the antenna monitor must provide accurate and stable signals to the monitor (e.g., rigidly mounted and non-rotatable loops and all system components protected from physical and environmental disturbances).

(2) Sampling lines for critical directional antennas (see § 73.14) must be of uniform length. Sampling lines for non-critical directional antennas may be of different lengths provided the phase difference of signals at the monitor are less than 0.5° between the shortest and longest cable lengths due to temperature variations to which the system is exposed.

(3) Other configurations of sampling systems may be used upon demonstration of stable operation to the FCC.

(b) A station having an antenna sampling system constructed according to the specifications given in paragraph (a) of this section, may obtain approval of that system by submitting an informal request to the FCC in Washington, DC. The request for approval, signed by the licensee or authorized representative, must contain sufficient information to show that the sampling system

is in compliance with all requirements of paragraph (a) of this section.

NOTE: A public notice giving additional information on approval of antenna sampling systems is available upon request from the FCC's current copy contractor.

(c) In the event that the antenna monitor sampling system is temporarily out of service for repair or replacement, the station may be operated, pending completion of repairs or replacement, for a period not exceeding 120 days without further authority from the FCC if all other operating parameters and the field monitoring point values are within the limits specified on the station authorization.

(d) If the antenna sampling system is modified or components of the sampling system are replaced, the following procedure shall be followed:

(1) Temporary authority shall be requested and obtained from the Commission in Washington to operate with parameters at variance with licensed values pending issuance of a modified license specifying parameters subsequent to modification or replacement of components.

(2) Immediately prior to modification or replacement of components of the sampling system not on the towers, and after a verification that all monitoring point values, base current ratios and operating parameters are within the limits or tolerances specified in the instrument of authorization or the pertinent rules, the following indications must be read for each radiation pattern: Final plate current and plate voltage, common point current, base currents and their ratios, antenna monitor phase and current indications, and the field strength at each monitoring point. Subsequent to these modifications or changes the above procedure must be repeated.

(3) If that portion of the sampling system above the base of the towers is modified or components replaced, a partial proof of performance shall be executed in accordance with § 73.154 subsequent to these changes. The partial proof of performance shall be accompanied by common point impedance measurements made in accordance with § 73.54.

(4) Request for modification of license shall be submitted to the FCC in

Washington, DC, within 30 days of the date of sampling system modification or replacement. Such request shall specify the transmitter plate voltage and plate current, common point current, base currents and their ratios, antenna monitor phase and current indications, and all other data obtained pursuant to this paragraph.

(e) If an existing sampling system is found to be patently of marginal construction, or where the performance of a directional antenna is found to be unsatisfactory, and this deficiency reasonably may be attributed, in whole or in part, to inadequacies in the antenna monitoring system, the FCC may require the reconstruction of the sampling system in accordance with requirements specified above.

[41 FR 7405, Feb. 18, 1976, as amended at 42 FR 24056, May 12, 1977; 44 FR 58731, Oct. 11, 1979; 46 FR 35462, July 8, 1981; 48 FR 38478, Aug. 24, 1983; 48 FR 44805, Sept. 30, 1983; 49 FR 32358, Aug. 14, 1984; 50 FR 47054, Nov. 14, 1985; 51 FR 9965, Mar. 24, 1986; 51 FR 40435, Nov. 7, 1986; 56 FR 64859, Dec. 12, 1991]

#### **§ 73.69 Antenna monitors.**

(a) Each station using a directional antenna must have in operation at the transmitter site an FCC authorized antenna monitor. However, if the station authorization sets specific tolerances within which the phase and amplitude relationships must be maintained, or requires the use of a monitor of specified repeatability, resolution or accuracy, the antenna monitor used will be authorized on an individual basis.

(1) Normally, the antenna monitor is to be installed immediately adjacent to the transmitter and antenna phasing equipment. However, the monitor may be located elsewhere provided that its environment is maintained at all times within those limits under which the monitor was type-approved.

(2) The antenna monitor installed at a station operating a directional antenna by remote control or when the monitor is installed in the antenna field at a distance from the transmitter, must be designed and authorized for such use in accordance with the provisions of § 73.53(b)(9).

(b) In the event that the antenna monitor sampling system is temporarily out of service for repair or re-

placement, the station may be operated, pending completion of repairs or replacement, for a period not exceeding 120 days without further authority from the FCC if all other operating parameters, and the field monitoring point values are within the limits specified on the station authorization.

(c) If conditions beyond the control of the licensee prevent the restoration of the monitor to service within the allowed period, informal request in accordance with § 73.3549 of the Commission's rules must be filed with the Engineer in Charge of the radio district in which the station is located for such additional time as may be required to complete repairs of the defective instrument.

(d) If an authorized antenna monitor is replaced by another antenna monitor, the following procedure shall be followed:

(1) Temporary authority shall be requested and obtained from the Commission in Washington to operate with parameters at variance with licensed values, pending issuance of a modified license specifying new parameters.

(2) Immediately prior to the replacement of the antenna monitor, after a verification that all monitoring point values and base current ratios are within the limits or tolerances specified in the instrument of authorization or the pertinent rules, the following indications must be read for each radiation pattern: Final plate current and plate voltage, common point current, base currents, antenna monitor phase and current indications, and the field strength at each monitoring point.

(3) With the new monitor substituted for the old, all indications specified in paragraph (d)(2) of this section, again must be read. If no change has occurred in the indication for any parameter other than the indications of the antenna monitor, the new antenna monitor indications must be deemed to be those reflecting correct array adjustments.

(4) If it cannot be established by the observations required in paragraph (d)(2) of this section that base current ratios and monitoring point values are within the tolerances or limits prescribed by the rules and the instrument of authorization, or if the substitution